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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,638	07/15/2002	Martin Matthew Matzuk	MTN-029US	5196

959 7590 10/06/2004

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EXAMINER	
QIAN, CELINE X	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/018,638	MATZUK ET AL.	
	Examiner	Art Unit	
	Celine X Qian	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 23-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/15/02* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/20/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *sequence compliance form*.

DETAILED ACTION

Claims 1-13 and 23-25 are pending in the application.

Election/Restrictions

Applicant's election of Group I in the reply filed on 7/16/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Accordingly, claims 1-13 and 23-25 are currently under examination.

Sequence Compliance

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. §§ 1.821-1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Sequences are disclosed in the specification and/or figures that are not identified by their sequence identifier (i.e., SEQ ID NO:). For example, in Figure 1 and 6, several nucleic acid sequences are disclosed, but none are identified by their sequence identifier. The Brief Description of the Drawings at page 3 and 4 also does not identify the sequences by SEQ ID NO. **Applicant is reminded that the entire specification and figures should be reviewed for sequence disclosures** and that each sequence disclosed in the specification must be identified by its sequence identifier (i.e., SEQ ID NO:). The specification must be amended to identify all disclosed sequences by their sequence identifier (i.e., SEQ ID NO), in accordance with 37 CFR 1.821(d).

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The disclosure is objected to because of the following informalities: The description of Figures 3, 4 and 5 appears to be false on page 21. In the first paragraph, it describes results obtained from the transgenic mouse with 10kb construct, which is shown in Figure 5 instead of Figure 3. In the second paragraph, it describes results obtained from the mouse with 3.3kb construct, which is shown in Figures 3 and 4 instead of 4 and 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13, 23-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The written description requirement is set forth by 35 U.S.C. 112, first paragraph which states that the: "*specification* shall contain a written description of the invention. . .[emphasis added]." The written description requirement has been well established and characterized in the case law. A specification must convey to one of skill in the art that "as of the filing date sought,

[the inventor] was in possession of the invention." See *Vas Cath v. Mahurkar* 935 F.2d 1555, 1560 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). Applicant may show that he is in "possession" of the invention claimed by describing the invention with all of its claimed limitations "by such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention." See *Lockwood v. American Airlines Inc.* 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

In analyzing whether the written description requirement is met, it is first determined whether a representative number of species have been described by their complete structure. Next, it is determined whether a representative number of species have been sufficiently described by other relevant identifying characteristics. The claim recites "an isolated polynucleotide derived from a region of a nonhuman GDF-9 gene selected from the group consisting of the first 10 kilobases of DNA immediately 5' of the transcription start site, and intron and the first 1 kilobase of DNA immediately 3' of the transcription termination site, wherein the isolated polynucleotide is greater than 261 nucleotides in length." This claimed genus of polynucleotides encompasses potentially a large number of DNA fragments of various sizes (>=261) and from different animal species, wherein said DNA fragments can be derived from either 5' or 3' of the GDF-9 gene, or from the intron of said gene. Such recitation also encompasses DNA sequences share a certain homology with any 261 or bigger DNA fragment from either 5', 3' or the intron of the GDF-9 gene, wherein said DNA may not even have a regulatory function. The specification only discloses a 10 kb fragment immediately 5' from the transcription start site of the mouse GDF-9 gene that directs transcription of GFP in mouse ovary, and a 3.3 kb fragment immediately 5' from the transcription start site of the mouse GDF-9

gene that directs transcription of GFP in mouse ovary and testis. The specification does not describe a regulatory element of any size in any other non-human animal that can direct testis or ovary specific gene transcription. The specification also fails describe any fragments larger than 261 bp isolated from either 5' or 3' of the mouse GDF-9 gene or in any intron of the GDF-9 gene that can direct ovary or testis specific transcription. Furthermore, the specification fails to teach what are the necessary elements these fragments must share to be functional as direct tissue specific expression in ovary or testis. As such, the structural functional relationship is missing.

The claims also recites "an isolated oocyte/testis-specific regulatory element derived from the 10 kb of DNA immediately 5' of the transcription start site of a GDF-9 gene, wherein the regulatory element is greater than 261 nucleotide in length" or "isolated oocyte/testis-specific regulatory element derived from the 3.3 kb of DNA immediately 5' of the transcription start site of a GDF-9 gene." This also encompasses a large number of polynucleotide of various sizes (>=261) and from different animal species, wherein said DNA fragments shares certain homology with sequences from the region of 10 kb or 3.3 kb 5' to GDF-9 gene from any species. Based on the limited disclosure of the specification as discussed above, it is unclear what is the necessary element within the mouse 5' sequence that would function as oocyte/testis specific regulatory element. As such, the specification fails to describe a representative number of claimed polynucleotide by their complete structure or other identifying characteristics.

The claims also recites "an isolated oocyte/testis-specific regulatory element derived from the 3.3 kb to 10 kb of DNA immediately 5' of the transcription start site of a GDF-9 gene, wherein the regulatory element is greater than 261 nucleotide in length and downregulates expression of a gene in oocyte/testis." This also encompasses a large number of polynucleotide

of various sizes (>=261) and from different animal species, wherein said DNA fragments shares certain homology with sequences from the region of 3.3 kb to 10 kb 5' to GDF-9 gene from any species. The specification only discloses that there is a possible testis transcription repressor within the region of 3.3 kb to 10 kb 5' to mouse GDF-9 gene. The specification fails to disclose testis transcription repressor in the same region in any other species of the non-human animal. The specification also fails to describe the size or sequence of such repressor. As such, the structural functional relationship of such repressor is missing. Therefore, the written description requirement is not met.

Since the specification fails to describe of the polynucleotide in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, it also fails to describe the vector and cell comprising said polynucleotide. Therefore, the written description requirement is not met for the invention of claims 1-13 and 23-25.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-13 and 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "derived" renders the claims indefinite because the number and nature of the derivative process is unknown. It is unclear what percentage homology the nucleic acid must

share with the original nucleic acid sequence to be considered "derived" from said regulatory element. As such, the metes and bounds of the claims cannot be established.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celine X Qian whose telephone number is 571-272-0777. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel Ph.D. can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Celine Qian, Ph.D.

Notice to Comply	Application No.	Applicant(s)	
	10/018638	Matzuk et al.	
	Examiner	Art Unit	
	Celine Qian	1636	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).

☒7. Other: nucleic acid sequences in the drawing lack sequence identifier.

Applicant Must Provide:

☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.

☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
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